

SPATIAL PROFILING OF PROTEINS USING HYDROPHOBIC MOMENTS

Abstract of the Disclosure

Generally, the present invention provides a number of procedures to spatially profile proteins by using hydrophobic moments. In all procedures, a hydrophobicity distribution of a protein is shifted and normalized. In one procedure, a shape or profile of a curve of a second-order moment of hydrophobicity is determined. A second procedure involves determining one or more ratios, such as the ratio of a distance at which the second order moment of hydrophobicity vanishes to the distance at which a zero-order moment of hydrophobicity vanishes. The distance at which a peak occurs in a profile of the zero- or second-order moment of hydrophobicity can also be used for comparison. For many of these procedures, a surface or profiling contour can be chosen and used to accumulate hydrophobicities and to determine the moments. These procedures can be combined to provide a good mathematical determination of whether a protein belongs to a particular class of proteins.